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### PURPOSE:

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To warn the pilot of impending hypoxic and to signal the ground monitoring station via 6187-3 of 2 conditions

Impending pilot hyperia.

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b. Pilot breathing has stopped for more than I minute.

## MATURE OF PROPOSAL:

- Modify the aircraft and the MA-2 high altitude helmsts by installing a hypexia Warning System, manufactured by the Beckman Instrument Corporation. The major components of the system will be identical to these currently being supplied under Contract No. for use by the Air Defense Command in F106 and F101 aircraft. This system has been undergoing operational development as well as static and flight tests by the United States Air Force for the past 2 years. Recent tests conducted during the month of December 1963 in F106 and F101 aircraft provided additional substantiation that the system is flight qualified. Major William Lee, Box 8072, Aeronautical System Division, Wright Patterson Air Force Base, Dayten Ohio, Phone: Clearwater 3-7111, Extension
  - 2. Concurrent with processing of this proposal the Contractor is negotiating with Beckman Instruments to obtain one system on consignment for installation and operational evaluation in one of the Project afferaft.

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33181, has been in charge of all development and tests.

3. The Amplifier-Indicator will provide two types of signals:

The aircraft will be medified as follows:

- Add a red HYPOXIA WARN light to the instrument panel or above the panel.
- b. Install the hypoxia Indicator/Amplifier in the R. H. Console.
- s. Revise the sireraft wiring and add 2 circuit breakers on the left side panel. Existing pilot and seat disconnects and harnesses for faceheat and interphone circuits will be replaced with harnesses and disconnects to include the additional & HYPOXIA warning circuits.
- d. Install the GFE adapter box for monitoring pilot breathing.

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# 5. All MA-2 Helmets will be modified as follows:

- a. Replace the existing a circuit interphene harness with an eight direct harness to accompate the existing interphene requirements and the hyperia sensor. The new cable will terminate with two separate pull-apart disconnects to mate with the interphene and hyperia warning harnesses.
- b. Install the hyporia sensor receptable and the sensor adjacent to the micro-
- 6. In addition to the protetype installation and testing which will be accomplished in computation with other flight tests, the Contractor anticipates a total of I test flight to check the production installation of the hyperia system and the operation of the GFF adapter box for manitering pilot breathing.
- 7. After tests are complete the Contractor will issue two service kits: one to modify the 7 sireraft and the other to modify the MA-2 helmets. (Quantity of 35 helmets EAFB 20, H 8, WRAMA 3, and LAC 4).
- 8. The installation will not weigh more than 5 pounds and moves the C.G. less than O.R inch forward.

### TEST EXPLIPMENT

A special HYPOXIA TEST UNIT consists of a TEST AMPLIFIER UNIT and a SEMBOR SIMULATOR.

The special TEST AMPLIFIER UNIT is recommended to proflight O, sensor sheekout and, if desired, for monitoring the pilots oxygen supply during preparations for flight. Used in conjunction with a SENSOR SINGLATOR, the TEST AMPLIFIER UNIT would also be used for calibration of the aircrafts Hyperia Warning Amplifier to match the particular sensor installed in the pilot's belief during the preflight.

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